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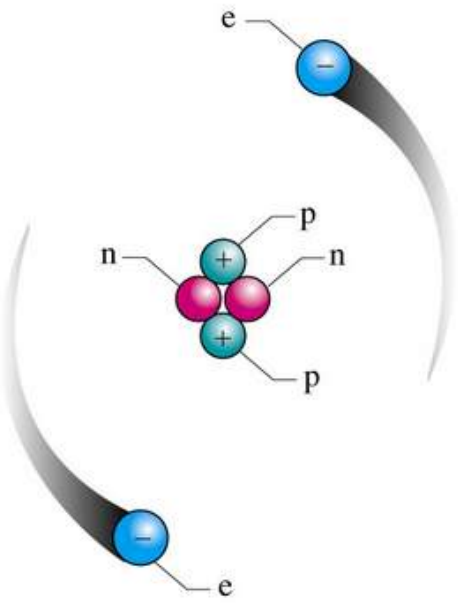
What is "Charge"?

by Miles Mathis



For more than two centuries now, since the time of Franklin, charge has defined the electrical force, and for just as long it has come in two forms: positive and negative. We now give the positive charge to a particle: the proton or nucleus; and we give the negative charge to the electron. But beyond that, we haven't made much progress since Franklin. QED is an E/M theory, it is true, and QED has discovered many things. But QED has not been able to put a mechanical foundation under the positive and negative signs. We still draw protons with little +'s on them and electron's with little -'s, as if that explains anything.

The reason for this lack of mechanical progress is that QED has never been interested in mechanics. It gave up on mechanics 80 years ago. It is interested in probabilities. This is shown by the ludicrous state of the

concept of charge. To explain the force between the electron and proton, the standard model now makes use of the "messenger photon," a so-called virtual particle that is made doubly virtual by always being "summed over" in a Feynmanian sense. This allows the standard model to have a force with no energy transfer. Since the mediating particles are virtual, with no mass or mass equivalence, the energy and forces are also virtual. The only thing that is not virtual is the acceleration, which we need to keep for our equations.

The reason the standard model so flagrantly avoids a real field here is to avoid assigning that field mass. Physicists must be aware that you can't have forces without masses or energies, or the equivalent, but they also know that giving the charge field mass or energy of its own, beyond some virtual fudging, would doom the entire house of cards that is QED and QCD. If you give the charge field mass or energy, then quanta must be radiating energy. If they radiate it, they lose it. QED and QCD can't explain this loss of energy, and don't want to explain this loss of energy, so they ignore it. It would require a re-do of decades of theory and equations, and nobody wants that. So, in their minds, it is preferable to be caught red-handed proposing forces and accelerations without masses or energies. They have such high opinions of their own abilities to convince, and low opinions of their audiences, that they really believe they can say these things out loud, with no curtains or magic wands, and not even have to break stride.

Any honest person, supposing one still exists in physics, would see this for the great feat of magic it is. By using virtual particles, the standard model achieves a force and a motion with no energy transfer. It achieves a kinematics with no mechanics. It achieves an answer with no explanation, a series of airy words with no physical content. The messenger photon appears out of nothing (achieved by some wish of the nucleus) moves in some ghostly fashion out to the electron, whispers something to it through the void, and then conveniently disappears. With such a transaction, we don't have to worry about conservation of energy or mechanics or force by contact or any of the old bugbears of physics. In this story, charge is nothing more than a black flag waved by a ghost.

What sort of physicists could be satisfied by such a story, much less proud of it? How can a theory (QED) which has made so little progress on the central question make any claim to success, much less completeness? The standard brag now is that quantum physics is so successful there is nothing left to do. Everyone has to go into string theory now in order to stave off boredom, we are told.

But enough of these people. It is not my lot to shoo flies. It is my lot to look seriously at problems that have been to left to rot for centuries, and this is another of them. And once again I will show that the answer is not so difficult. The answer has been undiscovered not because it is so complicated or esoteric, but because, for some reason unknown to me, the rest of mankind prefers to huddle and memorize and blow kisses to one another.

The key to unlocking this mystery is contained in the realization that the idea of attraction is non-mechanical. As I pointed out in my UFT paper, Newton's friend Jonathan Swift knew this centuries ago. Swift warned Newton of this, cleverly disguising his advice within the pages of *Gulliver's Travels* (as he did with much of his good advice). Unfortunately, Newton did not heed this advice, and no one since has paid it the proper attention.

This advice collides with "charge" in two separate places. Firstly, and most obviously, it disallows charge attraction. All attractions must be only apparent--the result of complex motions. The pluses and minuses of E/M theory are not only empty attributes, they are *impossible* attributes.

But Swift's advice collides with the idea of charge in another place. The gravitational field has also historically been defined as an attraction, and it turns out that the gravitational field has been hiding at the quantum level as well. Therefore, in order to solve the problem of charge, we have to uncover gravity at the quantum level, and then redefine it so that it is no longer an attraction.

In my UFT paper I did just that. There I showed that what we have always called the gravitational field at the macro-level is in fact a compound field that includes both gravity and the "charge" field. That is, it includes the field mediated by the messenger photon. Newton's gravity equation can be expanded, with G as the transform between the two fields. Once we re-expand the equation, we find that "mass" is hiding two separable features, and that one of them goes to one field and one goes to the other. Specifically, if we write mass as density x volume, the volume goes to the gravitational field and the density goes to the charge field (or what I call the foundational E/M field). Gravity is no longer dependent on density; it is proportional to volume or radius, and nothing else. Density is important only in the E/M field. I will refer you to that paper for a full explanation of the new mechanics and the new equations.

The way that all this impacts the problem of charge is that we can now re-define the charge field as a bombarding field only. It is always repulsive; never attractive. It is caused by radiation of these messenger photons, which I am going to re-dub *B*-photons (for bombarding photons). The repulsion is caused by an old-fashioned force by contact. Of course this means that the *B*-photons are not virtual: they have energy, mass equivalence, and even radius. In fact, I have already supplied the world with a derivation of this radius in my last paper. I not only have a newly named particle, I have a firm radius for it as well. When was the last time you saw that happen in physics? And my radius is not achieved by some slipshod math, some renormalized, summed over, dreamed up method from Pluto. My radius is taken right out of Newton's own equation. Newton himself knew of this number, though he never applied it to the right radius.

The other thing that my unified field allows us to do is discover the gravitational field at the quantum level. It turns out that once we re-expand Newton's equation into its two constituent fields, we can apply it at the quantum level directly. Because the gravitational part of this compound field is now dependent upon radius alone, this field increases in size at the quantum level by about 10^{22}. This makes it a major player in the quantum field once more.

These two fields allow us to explain charge mechanically because they are in vector opposition. Gravity causes an apparent attraction and the *B*-field causes real repulsion. This field differential is true at all levels of size, quantum and cosmic. The total force is

F = H - E

Where H is the new solo-gravity field, separated out from the compound field. F is just the F of Newton's equation.

In passing, I will remind the reader that I have avoided gravity as a *real* attraction by inverting Einstein's field. Using his equivalence principle, I have turned the universe inside out, mathematically. In one pass, I switch every gravitational acceleration vector in the universe. The math is unchanged, including most final equations of General Relativity; but we replace curvature with expansion. Instead of giving the curvature to the time/length graph, we give it to the time/size graph. The time/length graph reverts to a rectilinear Euclidean space, making our equations so much shorter and easier. We only have to get used to the idea of universal expansion. Big Bang theory and other cosmological theory has already accustomed us to thinking of an expanding universe, so I don't see any great jump in accepting that expansion from every point, instead of only as a whole. But if you have difficulty making the jump, you can read my voluminous papers, all attempting to convince you of the ultimate logic of it.

But to return to charge. According to my re-expansion of Newton's equation, we now have a compound field at the quantum level, with the two fields in vector opposition. How does this solve the charge problem? It solves it quite easily, since we can now create opposite potentials simply by size differentials. What we have is a small electron and a large proton (to simplify). Both are radiating *B*-photons. Let us say that the radiation from the electron is relatively negligible, so that we can look only at the radiation from the proton. The proton is emitting a bombarding field that tends to drive off all particles that come near. But it will drive off larger particles more successfully than smaller particles, since the smaller particles will

encounter a smaller cross-section of the field. Because the field is a field of discrete particles, a small enough electron could actually dodge the field almost entirely. But we will not imagine the electron is that small. We assume, for now, that it is much larger than the *B*-photon, and cannot dodge the field.

Also remember that any other proton that enters the field of our first proton will also be emitting its own *B*-field. These fields may interfere to some extent, but we would still expect the combined field to be more repulsive than either field taken alone. This must mean that any protons will be driven away from each other much faster than an electron will be driven away.

You will say that we still have repulsion of both the electron and the proton, but we have not brought the newly upgraded gravitational field into the mix. This field is going to cause an apparent attraction to all particles, just like the traditional field. All particles are going to appear to "fall" toward our gravitating proton, and they are all going to fall at the same rate. Standard gravity theory, so far. But let us use Einstein's equivalence principle to reverse only our terminology. Instead of saying that all objects are falling toward our proton, we say that our proton is chasing all objects at the same rate. An acceleration in one direction is equal to an acceleration in the other direction, in a rectilinear field.

So, in order to explain both positive charge and negative charge, we only have to propose that the proton is chasing the electron fast enough to catch it, but not fast enough to catch the proton. This gives us an apparent attraction of one, and an apparent repulsion of the other.

Another way to state this is to give numbers to the two repulsions. Say the repulsion of proton by proton by the *B*-field causes an acceleration of 10. And say that the repulsion of electron by proton by the *B*-field causes an acceleration of 2. All we have to propose is that our central proton is accelerating gravitationally at a rate greater than 2 and less than 5. Anywhere in that gap, we will see repulsion of the two protons and an attraction of the electron.

That is the simple mechanical explanation of charge.

What about current in a wire? You will ask how my theory explains that. Again, quite easily. Free electrons travel at high speed in a conducting wire, or any conductor, because the *B*-field is moving in only one direction in that substance. The *B*-field acts as a river, moving the electrons along by direct contact. This *B*-field river can be created in any number of ways, either by having lots of radiating particles at one end of the wire and few or none at the other, or by directionalizing the *B*-field through the shape of the molecules in the substance. Some molecules block certain directions of the B-field, simply by getting in the way. Of course I am simplifying to a very great degree here; but I can do so since, once my fields are understood, the questions are no longer difficult. Given my method, you can answer your own questions; and they no longer look very compelling to me.

Likewise, deciding precisely what the accelerations are in my examples above is not all that interesting, as a matter of theory (go to my paper on Gravity at the Quantum Level for the basic equations). These things can be sorted out by experiment. All you need from me is the method, and you now have that. Run with it with my full blessing.
